

SINKING SKIN FLAP SYNDROME POST DECOMPRESSIVE CRANIECTOMY: A CASE REPORT***Dr. Monika Negi and Dr. Akhilesh Negi**

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INTRODUCTION

Sinking Skin flap syndrome, also known as syndrome of the trephined, is a rare condition and potentially fatal complication of decompressive craniectomy which is usually done to control the intracranial pressure which is difficult to treat by medical treatment alone.^[1] It occurs due to reduced intracranial pressure than the atmospheric pressure which causes brain displacement across various intracranial boundaries.^[2] On physical examination there is sunken skin seen above the bony defect and the patient presents with neurological symptoms such as seizures, headaches or focal deficits.^[3]

CASE REPORT

A 19yr male, was diagnosed 1 month back with AVM in left parietal lobe for which he was operated. After which the patient presented with altered sensorium and seizures. A non contrast CT Head was done for the patient which showed craniectomy defect with overlying skin flap involving left fronto temporo parietal region with concavity of the overlying skin flap in left frontal

region. There is mass effect seen in the form of effacement of adjacent sulci, gyri and left lateral ventricle with buckling of grey white matter. There is also presence of areas of encephalomalacia seen involving left parieto-temporal lobe with associated ex vacuo dilatation of atria and occipital horn of left lateral ventricle, likely sequelae to old trauma.

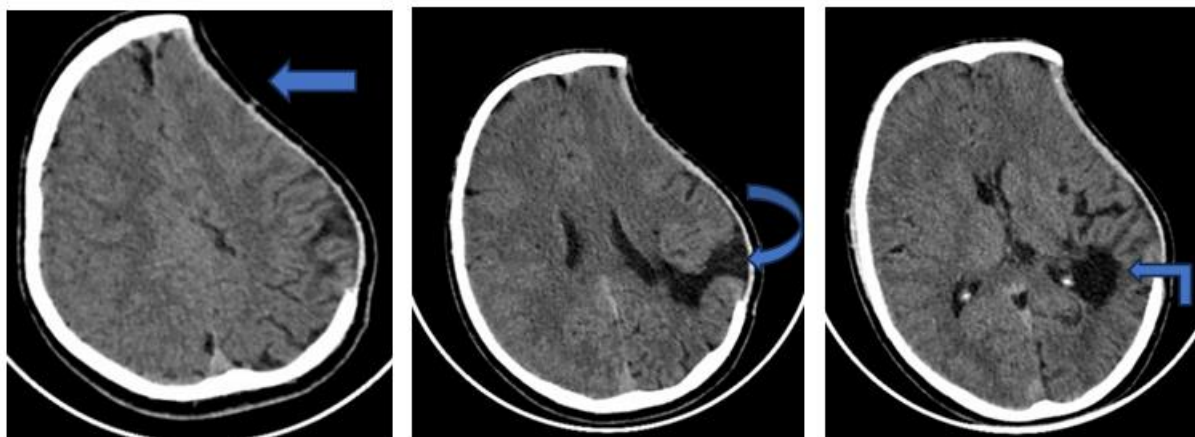


Fig 1a

Fig 1b

Fig 1c

Figure 1: Axial sections of NCCT brain arranged from cranial to caudal direction (Figure 1a) showing concavity seen in left frontal region with effacement of adjacent sulci gyri (Figure 1b and 1c) showing encephalomalacic changes in left parietal region with ex vacuo dilatation of lateral ventricle, sequelae to old trauma.

DISCUSSION

There are various indications for decompressive craniectomy which includes traumatic brain injury with medically refractory intracranial pressures, cerebral swelling due to vasospasm after a subarachnoid haemorrhage and subdural hematoma.^[2] Due to the overlying cranium defect the atmospheric pressure which

accounts for approx. 1033 cm H₂O can overwhelm the intracranial contents and can cause paradoxical herniation.^[4] The atmospheric pressure acting over the cerebral cortex may cause neurological symptoms such as seizures, headaches and sensory or motor deficit.^[5]

As this condition is exacerbated by a negative pressure gradient, its management involves eliminating the pressure gradient. The specific steps which can be taken to raise the intracranial pressure and counter act the external atmospheric pressure are: Trendelenberg position, adequate hydration and discontinuation of hyperosmolar drainage.^[4] The definitive treatment to counter this condition is cranioplasty, or conceptually, conversion of the 'open box' back to 'a closed box'.^[4]

CONCLUSION

Although rare, the possibility of paradoxical herniation in patients undergone decompressive craniectomy should always be kept in mind. Knowledge of the altered pathophysiology state of these 'open box' patients and the associated complications is critical for post-operative management. Cranioplasty is the preferential treatment of choice for these patients.

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